

Applicant : Wallace T.Y. Tang
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Attorney's Docket No.: 05542-459003 / 5353CI/CMP

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1.-10. (Cancelled)

11. (Currently Amended) A chemical mechanical polisher for planarizing a film on one side of a substrate having two sides, the polisher comprising:

a rotatable platen configured to receive a polishing pad, the polisher being operable to polish the film by rotating the platen to cause relative motion between the platen and the substrate;

at least one light source that is operable to transmit light through the polishing pad and toward the substrate from the side of the substrate with the film to illuminate at least one section on the film and reflect light off the illuminated section of the film; and

at least one device to receive the reflected light from the film on the substrate while the film is being polished, the at least one device being operable to monitor a dimensional change of the film based on the reflected light from the film on the substrate.

12. (Original) The polisher as claimed in claim 11 wherein the at least one device is positioned on the same side of the substrate as the light source.

13. (Previously Presented) The polisher as claimed in claim 11 wherein the at least one light source is operable to illuminate such that each monitored section is minimized in size to remove signal problems.

14. (Previously Presented) The polisher as claimed in claim 11, wherein the light source is configured to illuminate only one section, the section illuminated being a dedicated

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measurement area.

15. (Previously Presented) The polisher as claimed in claim 11, wherein the light source is configured to illuminate more than one section.

16. (Currently Amended) A chemical mechanical polisher for planarizing a film on one side of a substrate having two sides, the polisher comprising:

a rotatable platen configured to receive a polishing pad, the polisher being operable to change a thickness of the film by rotating the platen to cause relative motion between the platen and the substrate;

at least one light source that is configured to transmit light through the polishing pad and toward the substrate from the side of the substrate with the film to illuminate at least one section on the film and reflect light off the illuminated section; and

at least one means for receiving the reflected light from the film on the substrate while the film is subject to thickness changes, the at least one means being operable to monitor thickness changes of the film based on the reflected light from the film on the substrate.

17. (Previously Presented) The polisher as claimed in claim 16 wherein the at least one means for monitoring thickness change based on the reflected light signal comprises a photodetector connected to one of an interferometer and a spectrophotometer.

18. (Previously Presented) The polisher as claimed in claim 16 wherein the at least one light source is configured to illuminate such that each monitored section is minimized in size to remove signal problems.

19. (Previously Presented) The polisher as claimed in claim 16, wherein the light source is configured to illuminate only one section, the section illuminated being a dedicated measurement area.

20.-31. (Cancelled)

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32. (Previously Presented) The polisher as claimed in claim 11 wherein the device that monitors a dimensional change includes a photodetector connected for sending signals to one of an interferometer and a spectrophotometer.

33. (Previously Presented) The polisher as claimed in claim 11 wherein the light source is a laser.

34. (Previously Presented) The polisher as claimed in claim 16 wherein the at least one means is positioned on the same side of the substrate as the light source.

35. (Previously Presented) The polisher as claimed in claim 16 wherein the light source is configured to illuminate only one section, the section illuminated being a dedicated measurement area.

36.-41. (Cancelled)

42. (New) A chemical mechanical polisher comprising:

a movable platen configured to receive a polishing pad, the polisher being operable to polish a film on a substrate by moving the platen to cause relative motion between the platen and the substrate;

at least one light source that is operable to transmit light through the polishing pad and toward the substrate from the side of the substrate with the film to illuminate at least one section on the film and reflect light off the illuminated section of the film; and

at least one device to receive the reflected light from the film on the substrate while the film is being polished, the at least one device being operable to monitor a dimensional change of the film based on the reflected light from the film on the substrate.

43. (New) The polisher of claim 42, wherein:

the at least one device is positioned on the same side of the substrate as the light source.

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44. (New) The polisher of claim 42, wherein:
the at least one light source is operable to illuminate such that each monitored section is minimized in size to remove signal problems.

45. (New) The polisher of claim 42, wherein:
the light source is configured to illuminate only one section, the section being a dedicated measurement area.

46. (New) The polisher of claim 42, wherein:
the light source is configured to illuminate more than one section.

47. (New) The polisher of claim 42, wherein:
the device that monitors a dimensional change includes a photodetector connected to send signals to one of an interferometer and a spectrophotometer.

48. (New) The polisher of claim 42, wherein:
the light source is a laser.

49. (New) The polisher of claim 42, wherein:
moving the platen includes rotating the platen.

50. (New) The polisher of claim 42, wherein:
transmitting light through the polishing pad includes transmitting light through a perforation in the polishing pad.

51. (New) The polisher of claim 11, wherein:
transmitting light through the polishing pad includes transmitting light through a perforation in the polishing pad.